Chapter 10
Various Approaches for Food Waste Processing and Its Management

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ABSTRACT

Food wastage is a huge crisis arising in today’s world. An extensive amount of waste generation has become a serious concern of our society in the past years that affects developing and developed countries equally, and according to the Food and Agriculture Organization (FAO), as much as one-third of the food intentionally grown for human consumption is never consumed and is therefore wasted, with significant environmental, social, and economic ramifications. By wasting food, we also waste the time and energy that we have used to produce the food and as well our natural resources and the limited available agricultural land will be used up which could be handled in a much better and sustainable way. Additionally, waste has a strong financial impact and affects the environment including the overall greenhouse gas emission. In an increasingly resource-constrained world, it is imperative to reduce the high environmental, social, and economic impacts associated with this type of waste.

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INTRODUCTION

Every year approximately 1.3 billion tons of food which equals one third of total food production worldwide is lost or wasted (Gustavsson et al., 2011). Food waste is predominantly challenging in industrialized countries that have a major contribution to household food waste. As food production is resource intensive, food loses and wastes indirectly cost the environment and the major effect of this can be seen in the environmental burden in the form of, water and air pollution, deforestation, soil erosion as well as greenhouse gas emissions that occur during the processes of food production, stowage, conveyance, and waste-management (Mourad, 2016). Owing to these rising environmental burdens, social and economic concerns towards food waste is progressively accredited as a crucial issue between governments, academics, NGOs, businesses, and the general public (Beretta et al., 2013; Edjabou et al., 2016). Humans are totally depended on plants and animals for their nutritional assistances. The Global Food Report, by the Institute of Mechanical Engineers, has claimed that there could be a whopping three billion to be fed with food by the end of this century. In that period, one can expect great changes in the areas of wealth, calorific intake and dietary preferences of people in developing countries across the globe. Hence, it lies in our hands to focus in producing food in safer quantities by availing the best technologies.

Food waste is generally defined as the loss of materials planned for human ingestion that are afterward either discharged, which thereby get contaminated, degrade and are subsequently lost. As per the Food and Agriculture Organisation (FAO) of United Nations, food is “Any modification in the accessibility, edibility, wholesomeness or quality of eatable material that averts it from being eaten by people”. This definition was stated for the period of post-harvest of food ending, when the point is of proprietorship of the final consumer (FAO, 1981). Another definition of FL provided by Gustavsson et al., (2011) included description of food supply chain (FSC) production stage along with postharvest and processing stage. According to Parfitt et al., (2010), “Food waste (FW) is the loss of food taking place either at the market stage or at final consumption and utilization stages and is generated due to the negligent behaviour on the part of retailer as well as consumer. European Project FUSIONS defines food waste as ‘‘any form of food, edible or inedible, aloof from (diverted or lost from) the food supply chain that is to be either disposed or improved (includes anaerobic digestion, incineration, composted crops, co-generation, bio-energy production, sewer disposal, landfill or discarded into the sea)’’ (Östergren et al., 2014). For proper metabolic functioning and cellular activities, cell needs energy and this energy comes from food. All human beings depend on food for both energy constraint and survival.
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